

REMARKS/ARGUMENTS

Re-examination and favorable reconsideration in light of the above amendments and the following comments are respectfully requested.

Claims 11 - 20 are pending in the application. Currently, all claims stand rejected.

By the present amendment, claims 11 and 16 have been amended, and claims 14, 15, 18 and 20 have been cancelled without prejudice. Claim 11 has been amended to include the subject matter of former claims 14 and 15 with the range of inclination angles being limited to a range of from 10 to 30 degrees. Claim 16 has been amended in a similar fashion.

In the office action mailed September 12, 2006, claims 11, 16, and 20 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,917,500 to Lugos; claim 12 was rejected under 35 U.S.C. 103(a) as being unpatentable over Lugos in view of U.S. Patent Publication No. 2003/0142309 to Kuebler et al.; claims 13 and 19 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lugos in view of U.S. Patent No. 5,894,122 to Tomita; claim 17 was rejected under 35 U.S.C. 103(a) as being unpatentable over Lugos in view of U.S. Patent No. 6,597,185 to Talanov et al.; and claims 14, 15, and 18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lugos in view of Swiss Patent No. 663,473 to Buxbaum.

The foregoing rejections are traversed by the instant response.

With regard to the rejection of claims 11 and 16 on anticipation grounds over the Lugos patent, this patent discloses a system for determining color properties in order to recognize objects with colored surfaces. The color sensor has a head comprising a plurality of lighting fibers each directing a light of specific wavelength to the surface of the object and a central measuring optical fiber. The ends of the optical fibers are stripped.

Lugos does not explicitly explain why the optical fibers are stripped. However, it can be understood that this is in order to reduce the volume of the measuring head and due to the fact that the optical fibers must taper conically. See column 4, line 24.

Clearly, the optical fibers of Lugos are not parallel nor designed to be substantially parallel. In fact, due to the specific use of Lugos' device, there is not any need to have lighting fibers and measuring fiber parallel or substantially parallel. Nothing disclosed in Lugos would induce one of ordinary skill in the art to place the free ends of the optical fibers in such a parallel arrangement.

It appears clearly that the ends of the fibers of Lugos are stripped only in order to place them as close as possible from each other, to reduce the volume of the device, but angles of lighting and measuring are not, as such of importance.

Because the aimed use of the process according to the present invention is totally different from that of Lugos and because Lugos does not teach any information about a specific necessity to have the lighting fiber and the measuring fiber orthogonal to the product surface, Lugos can not teach or suggest the invention set forth in claims 11 and 16. Furthermore, Lugos does not teach any use of a supplemental fiber for measuring the reflected radiation in a direction oblique to the surface of the product for evaluating the energy diffused by the illuminated zone. In fact, Lugos does not teach any information about this because that is totally out of the concern of Lugos, whose system has no need for considering such diffused radiation.

Applicant notes that amending claim 11 to define the measurement method as directed to a metallurgical product, and particularly to determining the alliation percentage of a galvanized steel strip, is not only an intended use. It is clear from the amendment that the protection being sought by claim 11 in the present use is not linked to color, wavelength and so on, but specifically to a capacity of reflection which varies as a function of the physico-chemical properties of a metal surface which depends upon the migration of the iron atoms of a coating to the extreme surface, as mentioned on page 2, first paragraph, of the instant specification. The present invention also aims to overcome during the measurement the influence of morphological variation of the

surface such as micro roughness. This is why the lighting direction and the observation direction shall be both orthogonal to the surface.

None of the secondary references cures the deficiencies of Lugos. With regard to Buxbaum, it is no longer relevant against the patentability of claims 11 and 16 because it does not teach or suggest the claimed angles. Buxbaum teaches one to measure a reflected radiation at two different inclinations, in particular three degrees and six degrees, in order to deduce from these measurements characteristics representative of roughness. This is totally different from the invention set forth in claims 11 and 16 where it is specifically defined to measure the reflected energy perpendicular to the surface in order to avoid the disturbing effects of roughness. Furthermore, Buxbaum does not consider measuring energy diffused, which would have implied to measure radiation in a direction more inclined to the surface than the aforementioned angles of three and six degrees.

The present invention is based on the discovery that the rate of alliation of the surface of a galvanized steel strip can be evaluated from the reflected intensity of an emitted light radiation directed orthogonally onto the strip surface, which reflected light being measured also orthogonally to the surface. More information about the rate of alliation can be obtained from observing and measuring the intensity of light diffused by the surface, in the

specific range of from 10 to 30 degrees. This range, as now claimed in claims 11 and 16, further distinguishes the subject matter of claims 11 and 16 from Buxbaum taken alone or in combination in Lugos.

Further, given the different purposes of Lugos and Buxbaum, one of ordinary skill in the art would not be motivated to combine the two references in the manner suggested by the Examiner. Even if one were so motivated, one would not arrive at the claimed invention.

Claims 12, 13, 17 and 19 are allowable for the same reasons as their parent claims as well as on their own accord. The cited and applied references individually and collectively do not teach or suggest the combination of elements set forth in these claims.

For the foregoing reasons, the instant application is believed to be in condition for allowance. Such allowance is respectfully solicited.

Should the Examiner believe an additional amendment is needed to place the case in condition for allowance, the Examiner is hereby invited to contact Applicant's attorney at the telephone number listed below.

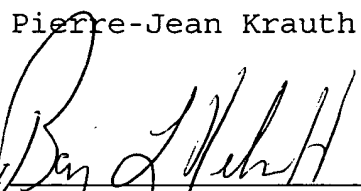
A request for a one month extension of time and check in the amount of \$120.00 to cover the cost of the extension of time fee are enclosed herewith.

Should the Director determine that an additional fee is due, he is hereby authorized to charge said fee to Deposit Account No. 02-0184.

Respectfully submitted,

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By


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I, Karen M. Gill, hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313" on **January 12, 2007**.

